

# COLLEGE CHEMISTRY 1

Revised 11/29/2011

C - L - CR  
3 - 3 - 4

**Course Number** CHM110

**Prerequisite(s)** ENG 032, MAT102 with a minimum of C

**Co-requisite(s)** None

**Course Description**

This course is the first course in a sequence, which includes the following topics: atomic and molecular structure, nomenclature and equations, properties, reactions and states of matter, stoichiometry, gas laws, solutions, and equilibria.

**Course Outcomes:** Students should be able to demonstrate:

1. Rationality, logic and coherence through critical thinking;
2. Their ability to express themselves effectively in quantitative and qualitative terms;
3. The scientific method of inquiry;
4. Their ability to access, retrieve, synthesize and evaluate information.

**Textbook(s)** McMurry, John, and Fay, Robert C., Chemistry, 6th Ed., Pearson/Prentice Hall, 2011

Bhatti, A.M., and Mehta, S., Laboratory Manual for College Chemistry I, Spartanburg Community College, Spartanburg, SC, 2009

**References** N/A

**Other Required Materials, Tools, and Equipment:** A scientific calculator (no cell phone calculator)  
Safety goggles for the laboratory  
Solutions manual (optional) for McMurry & Fay's Chemistry  
All lecture notes will be posted on the Science Department Website. Any additional resources (handouts) will be provided to the Student by the Instructor.

**Method of Instruction:** Lecture and discussion, demonstrations, audio-visual materials, on-line resources, projects, quizzes and written exams.

**Grading System:**

90 - 100	=	A
80 - 89	=	B
70 - 79	=	C
60 - 69	=	D
Below 60	=	F

<b><u>Grade</u></b>	Tests	=	50%
<b><u>Calculation</u></b>	Laboratory	=	30%
<b><u>Method:</u></b>	Final Exam	=	<b><u>20%</u></b>
		=	100%

**Attendance Policy:** See Student Handbook Pages 77-80  
The withdrawal date for Fall semester will be 11/1/11.

**Academic Conduct:** **ACADEMIC DISHONESTY:**  
Please See Student Handbook Page 98

**CELLULAR PHONES AND PAGERS/BEEPERS:**

Please See Student Handbook Pages 76-77

**Class procedures:** **Chemistry requires no one miss over 10 hours of lecture.**

Preparation:

1. Read over the material before coming to class.
2. Come prepared to do the work each day.
3. Be in your place with lecture notes at the beginning of each class period.
4. Pay careful attention to the printed instructions.
5. Be considerate of your class associates. Your activities may disturb them so they are unable to benefit from the lecture.
6. Report immediately to the instructor any emergencies or injuries that occur.

**Accommodations:** Students who need special accommodations in this class because of a documented disability should notify Student Disability Services by calling (864) 592-4818, toll-free 1-800-922-3679; via email through the SCC web site at [www.sccsc.edu/resources/disabilities](http://www.sccsc.edu/resources/disabilities); or by visiting the office located in the East Building Room 30-B on the SCC Central campus. Contacting Student Disability Services early in the semester gives the College an opportunity to provide necessary support services and appropriate accommodations.

**Course**  
**Competencies &**  
**Objectives:**

**As a result of successful completion of this course, a student will be able to:**

- I. Describe properties of elements and names of compounds.
  1. Describe properties of elements (including atoms, electrons, and nuclei).
  2. Radioactive properties of atoms, nuclear reactions,
  3. Describe names of compounds.
  4. Describe liquids, solids, and phase changes.
  
- II. Apply calculations involving unit conversion and gas laws.
  1. Apply calculations involving unit conversion.
  2. Apply gas laws.
  
- III. Apply calculations involving chemical equations and formulas.
  1. Calculate molar masses from formulas.
  2. Calculate yields using chemical equations.
  3. Calculate percents and empirical formulas.
  
- IV. Describe reactions in aqueous solutions.
  1. Describe types of reactions.
  2. Describe aqueous acid-base equilibria.
  
- V. Describe properties related to electron distributions.
  1. Describe Lewis electron-dot structures.
  2. Describe shapes of molecules.
  3. Describe valence bond theory.
  4. Describe molecular orbital theory.
  
- VI. Apply basic laboratory operations.
  1. Apply basic laboratory operations to the study of measurement, density, chemical and physical changes, radioactive decay, law of constant composition, and chemical formula.
  2. Apply basic laboratory operations to the study of ionization, acid-base neutralization, reactivity of elements, and molecular structure, Gas Laws.